Helping Put MAP on the Map?

San Francisco Bay Area
Wetland Habitat Goals Project

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Serious Work & Abundant Help

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3 Steps to Regional Conservation

1. Set quantitative regional goals for how much of what kinds of habitat are needed where, and why.

   The scientific and engineering answers must relate directly to management issues that are clear and dominant.
3 Steps to Regional Conservation

1. Set regional habitat goals.
2. Adjust policies, programs, and projects as tools to achieve the goals.

*Managers must be willing and able to change how they work and what they do.*
3 Steps to Regional Conservation

1. Set regional habitat goals.
2. Adjust policies, programs, and projects to achieve the goals.
3. Measure progress toward the goals (and adjust the goals for new ideas).

Data fuel adaptive management, and good data are very cost-effective.
Goals Project Case Study

History of Untenable Arguments

Every wetland can do everything for everyone all the time.

Control flooding, Recharge Aquifers, Filter Water and Sediment, Control Erosion, Feed People, Provide Recreation, Look Good, Recover Endangered Species
Goals Project Case Study

History of Untenable Arguments

Every wetland is precious.

Every square foot of every wetland is precious.
The Two Main Wetland Types Are Mutually Exclusive

Tidal Marsh

Diked Marsh
High Tide Inside
The Golden Gate
Before
Euro-American Contact
High Tide Inside The Golden Gate

After Euro-American Contact
Tidal Marsh
*Before* Euro-American Contact

200,000 acres
Tidal Marsh

Before Euro-American Contact

40,000 acres
Three Competing Views

- Diked Marsh as *Real Estate*
- Diked Marsh as *Seasonal Wetlands*
- Diked Marsh as *Potential Tidal Marsh*
Three Competing Views

- Diked Marsh as Real Estate
- Diked Marsh as Seasonal Wetlands
- Diked Marsh as Potential Tidal Marsh

Development VS Environment
Three Competing Views

- Diked Marsh as Real Estate
- Diked Marsh as Seasonal Wetlands
- Diked Marsh as Potential Tidal Marsh

- Development VS Environment
- Migratory Bird Treaties VS Endangered Species Act
Toward Resolution

- Diked Marsh as Real Estate
- Diked Marsh as Seasonal Wetlands
- Diked Marsh as Potential Tidal Marsh
- Development VS Environment
- Migratory Bird Treaties VS Endangered Species Act
- Mitigation Continues

Mitigation Continues
Toward Resolution

Diked Marsh as Real Estate

Development VS Environment

Mitigation Continues

Diked Marsh as Seasonal Wetlands

Migratory Bird Treaties VS Endangered Species Act

Holistic Habitat Goals in Watershed Context

Diked Marsh as Potential Tidal Marsh

Mitigation Continues
How to Set Habitat Goals

Assemble a team of environmental managers, scientists, and engineers.

Find State and Federal leadership.

Scientists need to be mindful of budgets and schedules.

Managers need to give scientists time to think.
Bosses with Purse Strings

Dynamic Staff

Science

Policy

Project/permit management

Science and Engineering Teams
Bosses with Purse Strings

Trust: thinking out loud together

Dynamic Staff

Science and Engineering Teams

Science

Policy

Project/permit management
How to Set Habitat Goals

Define the scope of the regional goals.

Regions have natural, social, and practical dimensions.
How to Set Habitat Goals

Define the big problem and envision the ideal solution. Make choices.

The problem-of-interest is the center of the practical ecosystem.

Things that directly affect the problem are part of the solution. Others things lead to other problems.
How to Set Habitat Goals

Understand the environmental past, the present, and change.

*History can explain the present and help us forecast the future.*

*History is common ground. The history of a place unites the people who live there.*
How to Set Habitat Goals

Use everything anyone knows.

*Acknowledge what is known as fact, can be inferred from fact, or is mostly expert guesswork.*

*Guesswork by experts is useful.*
How to Set Habitat Goals

It’s OK to think ecologically.

*Materials cycle and energy flows across jurisdictional lines, fence lines, and even watershed boundaries.*

*Visualize functions that account for the problem that needs to be solved.*
How to Set Habitat Goals

Make regional maps of the past, present, and needed future habitats.

*Maps help us think well together about the land and the life it should support.*

*Mapping the future makes goals real.*

*GIS makes zoom-lens thinking out loud together possible.*
How to Set Habitat Goals

Have fun with conceptual models.

*Model what we know and don’t know.*

*Model what we can and can’t manage.*

*Try to separate natural history from human history.*
Conceptual Model
Wetland Form and Function
Practical Points of View

Ecosystems don’t care; people do.

All natural resources are actively managed or passively impacted to some extent.

Knowledgeable people care, and caring people can change the world.
Practical Points of View

The role of environmental science is to advance public debate.

Ecological health is a matter of culture, and culture is more than science.

Science is needed to define alternative possibilities and forecast their likely consequences.
Practical Points of View

Plan for implementation before the goals are set.

*Focus on project performance in the context of ambient status and trends.*

*Provide project design review to assure consistency with region goals.*
Practical Points of View

How will we measure progress?

Inventory what we have, monitor how it’s doing, assess government response, survey public sentiment.

Link mitigation projects to impacted sites and track net habitat changes in watershed and regional context.
Bay Area Wetland Tracker

The Bay Area Wetland Tracker is an online tool designed to map and track wetland projects in the Bay Area. The interface includes a map of the region with various colored areas representing different types of projects and features. The table below lists a project with its details:

<table>
<thead>
<tr>
<th>Project</th>
<th>Counties</th>
<th>Total area</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Slough</td>
<td>Solano</td>
<td>94.1 acres</td>
</tr>
</tbody>
</table>

*Includes files or web links*
Practical Points of View

Report frequently to the public.

Everyone gets everything all the time.

Interim products (even incomplete answers) keep people interested.

Public involvement builds public support.
Criteria to Assess Regional Conservation Plan

Is it Relevant?

✓ Does it answer managers’ questions?
✓ Have agency staff taken ownership?
✓ Is it funded (on 3-5 year cycles?)
✓ Does it provide for early success?
✓ Does it enjoy political good will?
Criteria to Assess Regional Conservation Plan

Is it Defensible?

✓ Does it reflect the consensus of scientific understanding?
✓ Is it consistent with natural processes?
✓ Is it sensitive to new understanding?
✓ Is it more self-contained than subject to externalities?
Criteria to Assess Regional Conservation Plan

Will it be Valuable tomorrow?
✓ Does it inform land use and major infrastructure designs?
✓ Will it recover endangered species?
✓ Does it improve the efficacy of policies and programs?
✓ Does it evoke a sense of place and purpose?
In summary, a successful regional habitat plan:

Answers the question: how much of what kinds of habitat are needed where, and why ...

With an expert map regardless of jurisdiction or property lines ...

That inspires a caring community to turn public policies, programs, and projects into ways to achieve the goals.
Thank You

March

April

June

July

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